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Raymark Bulletin # 29

November 1999

AIR MONITORING & SAMPLING DURING RAYMARK SITE CLEAN UP

This fact sheet describes the air monitoring procedures that were used during remediation activities at the Raymark Industries, Inc. site on East Main Street. It describes the types of air monitoring and sampling techniques, safety procedures, and how results were communicated to the public.

During the excavation, removal, treatment and transport of contaminated soils, people living and working near site activities may be concerned about the potential for exposure to contamination in the air. To reduce the likelihood of any contamination becoming airborne, certain work practices are used. These include wetting of the material prior to invasive activities like digging, keeping exposed materials wet, covering material when transporting or storing, and performing certain tasks in enclosed and controlled environments. In addition, air monitoring and sampling can be done to help make sure that work practices are effective.

During the Raymark Industries site cleanup, an air monitoring and sampling plan was developed to ensure that clean up activities including soil excavation, movement and storage did not cause soil and its contamination to become airborne at levels that presented a health concern. A similar plan will be developed and implemented by EPA and their contractors for Shore Road activities. The following provides an overview of what was done for the Raymark Industries site located on East Main Street.

HOW ARE CONTAMINANTS MEASURED IN AIR?

In general there are two basic ways air quality data can be collected: air sampling and air monitoring. Each set of data provides an important piece of information that, as a whole, can be used to ensure that airborne contamination is not present at levels of concern to public health.

Air monitoring provides a <u>real-time or immediate reading</u> of the levels of certain air contaminants. These data are useful for evaluating work practices and ensuring that dust from site activities is not being generated in the first place. Monitoring is performed in the actual work zone where there is the greatest potential for airborne contamination to be present. Air monitoring is used to determine the need for any immediate action to reduce airborne emissions. Real-time monitoring can be done for only a small number of contaminants, primarily particulate matter or dust. Although concentrations of other contaminants are not available with real-time monitoring, the particulate data are used as a surrogate for other contaminants.

Air sampling provides information on the average concentrations of a contaminant over a certain period of time, most commonly, a work day. These data are usually collected at a site fence line and are used to provide an assurance that contamination did not migrate off site at levels of concern. While air sampling is the most useful information in determining whether air contamination will present a public health threat, the limitation is that the data are not available immediately because air samples require laboratory analysis.

WHAT WAS DONE DURING THE RAYMARK SITE CLEAN UP?

Both air monitoring and air sampling were conducted throughout the Raymark facility site clean up. Air monitoring was done on-site directly adjacent to invasive soil activities. Air monitoring equipment gave an immediate reading of the amount of dust in the air. Any exceedance of an action level triggered an immediate change in work practice. These included additional wetting or work stoppage. Because of the use of real-time air monitoring equipment in the work zone, it was unlikely that contamination could be generated at a level that would present a problem at the perimeter of the site. This is because any indication of contamination becoming airborne was immediately addressed, reducing the potential for levels of health concern to reach the perimeter of the site.

Air sampling locations were established along the perimeter of the Raymark facility at 6 to 8 fixed locations. One mobile station was also used and moved according to work location and duration. Four additional mobile samplers for asbestos were also used throughout the project. Perimeter locations are used to provide information on what people would be potentially exposed to off-site. If contamination was identified above action levels, steps were taken to identify the source of the problem and the need for a change in work practices to stop contamination from getting into the air. Air sampling at the perimeter of the Raymark site included asbestos, lead, polychlorinated biphenyls (PCBs) and total suspended particulate matter (dust). By ringing the perimeter of the site, air sampling data were available upwind and downwind of site activities and adjacent to the nearest residence. Every day, an on-site permanent meteorological station recorded wind direction and speed. If an action level was exceeded at any of the perimeter monitoring locations, this information assisted in determining the potential source and work strategies to reduce additional migration.

WHAT WAS FOUND DURING THE RAYMARK FACILITY CLEAN UP?

Health based action levels were set for both the air monitoring and air sampling results. These levels were set with safety factors built in. Safety factors are particularly important for air sampling results since the data are not available immediately. All exceedances of the air sampling data were evaluated by federal, state and local health agencies. Exceedances were evaluated to determine if they presented a health

concern based on the concentration and duration. This information was used to communicate the need for some additional changes in work practices.

Throughout the months of extensive soil handling operations at the Raymark facility, there were very few exceedances of action levels at the perimeter. During the spring of 1996, exceedances of total suspended particulate matter were occurring at one sampling location near East Main Street. It was determined that these exceedances were associated with increased truck traffic in and out of the facility. Efforts were employed to increase wetting of road surfaces on-site, and street sweeping was done along East Main Street to reduce dust generation in this area. During this time there were no exceedances of action levels of lead, asbestos or PCBs. In October of 1995, a certain type of PCB known as Aroclor 1016 was identified at one air sampling location. Based on wind direction, it was not clear if this contaminant was coming from the site or off-site. Aroclor 1016 was not a PCB identified in Raymark waste and was never identified in the air sampling results again.

HOW WERE RESULTS PROVIDED TO STRATFORD RESIDENTS?

All air data were evaluated by the health agencies on a weekly basis. In addition, notification of exceedances of perimeter action levels were made to the health agencies as soon as they were identified. Throughout the clean up at the Raymark facility, "Demolition Bulletins" were published and distributed. Each Bulletin provided a summary of the previous week's air results. In addition, all of the air data were provided to the Stratford library.

SUMMARY

The air monitoring and air sampling efforts undertaken during the Raymark Industries site clean up provided an assurance that *work practices to minimize the migration of contamination off-site were effective and people living and working near the site were not exposed to contamination at levels of concern*. A similar plan will be developed for all the other Raymark site activities. The air monitoring and sampling plan will be available and the health agencies will provide regular updates on the air results.

If anyone has questions about the air monitoring or air sampling please feel free to call the Stratford Health Department at 203-385-4090.